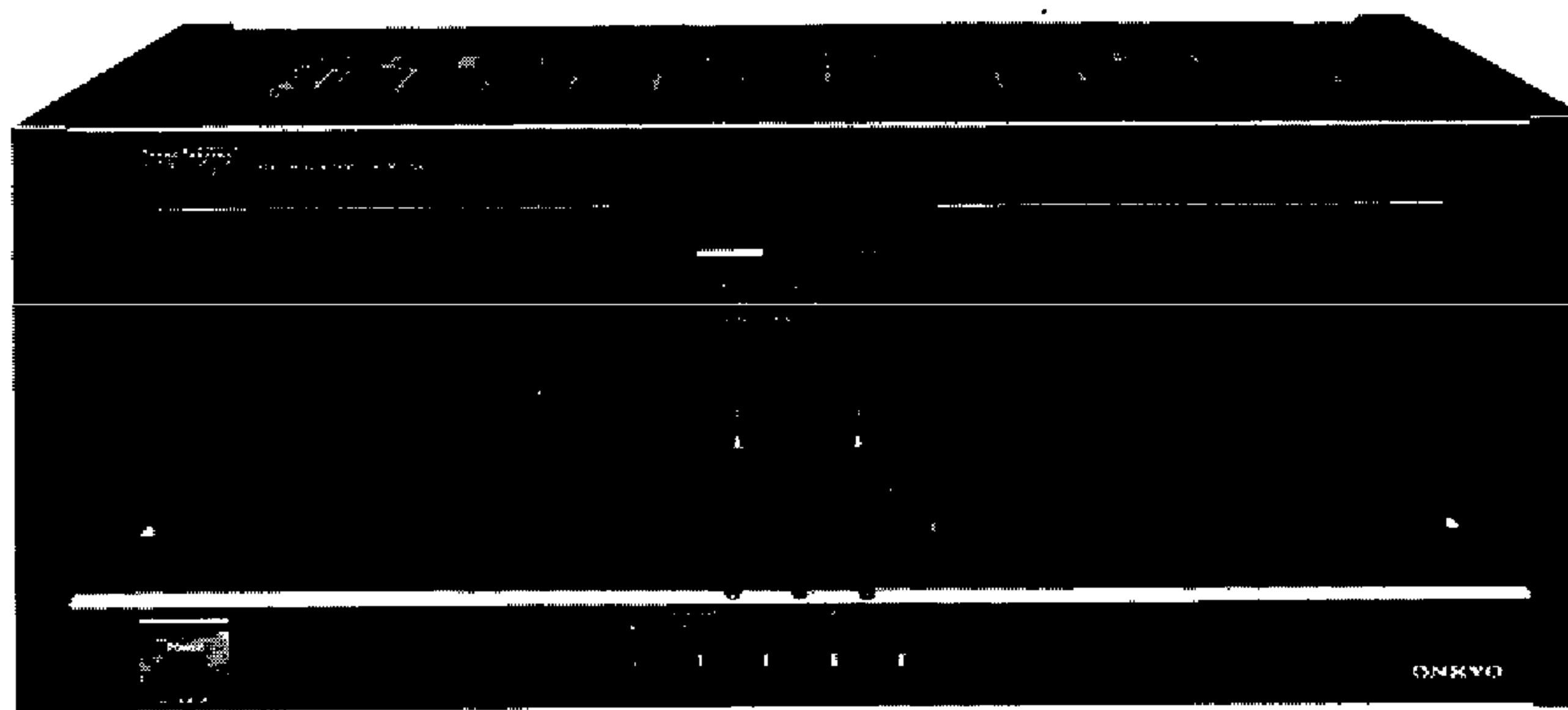


ONKYO SERVICE MANUAL

Stereo Power Amplifier

MODEL M-508



UD	120V AC, 60Hz
UG	220V AC, 50Hz
UQ	240V AC, 50Hz
UW	120V or 220V AC, 50/60Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.



SPECIFICATIONS

Music Power Output:	2 x 450 watts at 4 ohms, 1 kHz (DIN)	2 x 260 watts at 8 ohms, 1 kHz (DIN)
Continuous Power Output:	2 x 315 watts at 4 ohms, 1 kHz (DIN)	2 x 215 watts at 8 ohms, 1 kHz (DIN)
	200 watts per channel, min. RMS, at 8 ohms, both channels driven, from 20 Hz to 20 kHz, with no more than 0.003% THD	
Total harmonic distortion:	0.003% at rated power 0.003% at 1 watt output	
Intermodulation distortion:	0.003% at rated power	
Frequency response:	+0, -1.5 dB at 1 Hz to 100kHz	
Input sensitivity:	1.0V	
Input impedance:	20kohms	
Damping factor:	140 (8 ohms, 1 kHz)	
S/N ratio:	120 dB (IHFA, Shorted)	
Outputs:	SPEAKERS 1 & 2, AC OUTLET (120V models only)	
Inputs:	INPUT (VARIABLE, DIRECT)	
Power Supply:	European models: AC 220V, 50Hz Canadian models: AC 120V, 60Hz British and Australian models: AC 240V, 50Hz Worldwide models: AC 120V, 60Hz (Switchable): AC 220V, 50Hz	
Dimensions:	465(W) x 185(H) x 426(D) mm. 18 5/16" x 7 9/32" x 16 25/32"	
Weight:	25 kg, (55.1 lbs.)	

Specifications and features are subject to change without notice.

PRECAUTIONS

1. Replacing the fuses

For continued protection against risk fire, replace only with same type and same rating fuse.

CIRCUIT NO.	PART NO.	DESCRIPTION
F801, F802	252052	7A (ST-6), Primary fuse (120V, 120V/220V model)
F803, F804	252077	4A-SE-EAK, Primary fuse (220V, 120V/220V, 240V model)
F702	252044	2A (ST-6), Secondary fuse (120V, 120V/220V model)
F702	252074	2A-SE-EAK, Secondary fuse (220V, 240V model)

2. Replacing the lamp

This unit uses the lamp listed below.

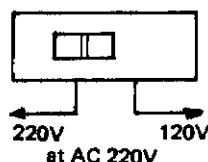
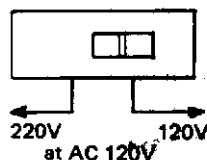
CIRCUIT NO.	PARTS NO.	DESCRIPTION
PL881, PL882	210191	PL14V 150mA (Green)
PL883, PL884		
PL885, PL886	210192	PL14V 150mA (Orange)
PL887, PL888		

3. Insulation resistance measurement (Only U.S.A. model) ~

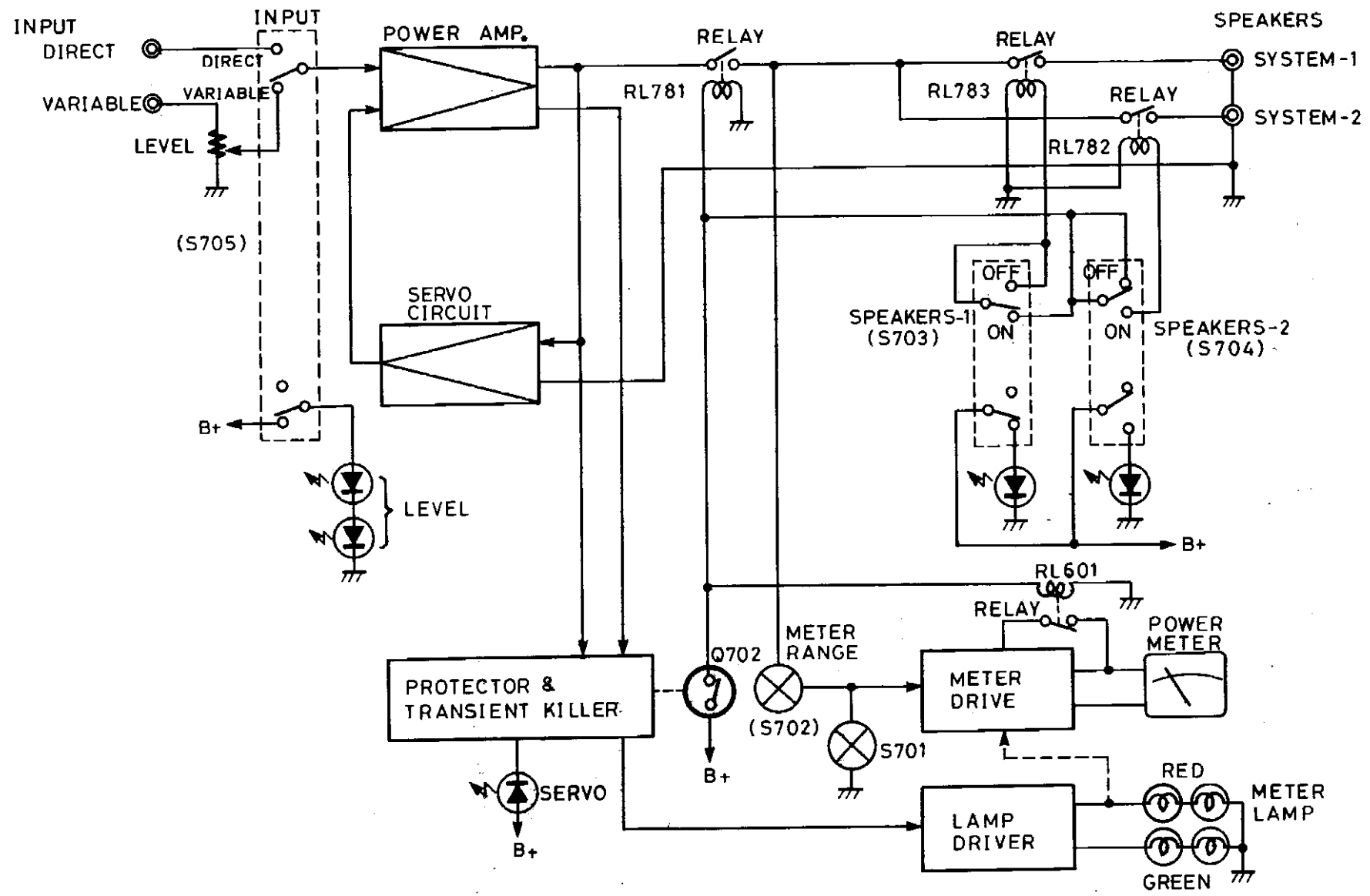
Connect the insulating-resistance tester between the plug of power supply cable and the terminal GND on the back panel.
Specifications; More than 10 MΩ at 500V.

4. Voltage selector (rear panel)

Worldwide models are equipped with a voltage selector to conform with local power supplies. Be sure to set this switch to match the voltage of the power supply in your area before turning the power switch on. Voltage is changed by sliding the groove in the switch with a screwdriver or similar instrument to the up or down position. Confirm that the switch has been moved all the way to the up or down before turning the power switch on. If there is no voltage selector switch on the unit you have purchased, it can only be used in areas where the power supply voltage is the same as that of the unit.



BLOCK DIAGRAM



ADJUSTMENT PROCEDURES

1. Preparation

- (1) Leave the machine in a normal condition parallel to the work bench, maintaining a clearance of 15mm from the bottom for air circulation.
- (2) Set the level to minimum with no load and no signal.
- (3) When making the adjustment, there must be no breeze blowing from the outside.

2. Zero adjustment of meter

- (1) Turn power OFF.
- (2) Make the adjustment with the zero adjustment knob to set the meter needle to zero.

Caution: Do not make the adjustment immediately after turning off the power.

3. Adjustment of idling current

- (1) Turn ON the power switch, and leave the unit as is for about 5 minutes.
- (2) Adjust the semi-fixed resistor R423 (R424) so that the voltage between the terminals V_{CT} and I_{ID} of the printed circuit board NAPA-2625 is 5mV.

4. Meter circuit offset adjustment

- (1) Adjust the semi-fixed resistor R645 (R646) of the printed circuit board NAMA-2615 so that the meter needle is at zero.

5. Meter circuit level adjustment

- (1) Input the 1kHz signal from the low frequency oscillator so that the amplifier output is 12.65V (22.0db).
- (2) Adjust the semi-fixed resistor R613 (R614) of the printed circuit board NAMA-2615 so that the meter needle is at 0db.

Caution: The adjustment must be made while inputting the signal to a each single channel of the L and R channels.

6. Operating check of protection circuit

- (1) When the power switch is turned ON,
 - 1) Even though there is a signal input, the meter should have no deflection.
 - The meter lighting lamps PL885, PL886, PL887, and PL888 (red) light.
 - SERVO OPERATION LED does not light.
 - 2) After about 5 minutes, relay RL781 of the NAOP-2619 printed circuit board and relay RL601 of NAMA-2615 go ON.
 - SERVO OPERATION LED lights.
 - The meter lighting lamps change to PL881, PL882, PL883, and PL884 (green).
 - When SPEAKER SWITCH 1 and 2 are turned ON, relay RL782 and RL783 go ON.
 - The meter needle deflects in response to the signal.
- (2) When the power is turned OFF,
 - Immediately all relays go OFF.

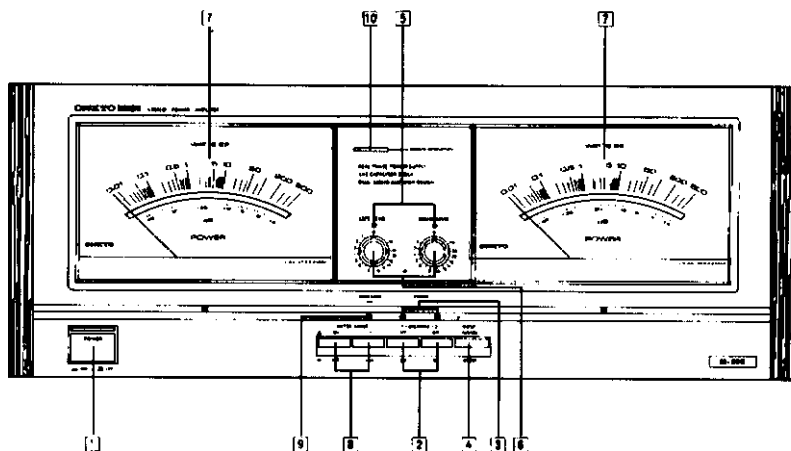
7. Check of direct current detection circuit of protection circuit

- (1) With no load, when 1V DC is input, the speaker relay operates, the SERVO OPERATION LED goes out, and the meter lighting lamps change to red.
- (2) Make the same check with -1V DC.

Caution: During this test, there should be absolutely no load connected and the load terminals must not be shorted.

Note: When the protection circuit operates due to an abnormality in the circuit, after several seconds, the protection circuit holds. Also, even after the cause of the abnormality is eliminated, the circuit is held as is. To cancel, turn the power OFF for several minutes.

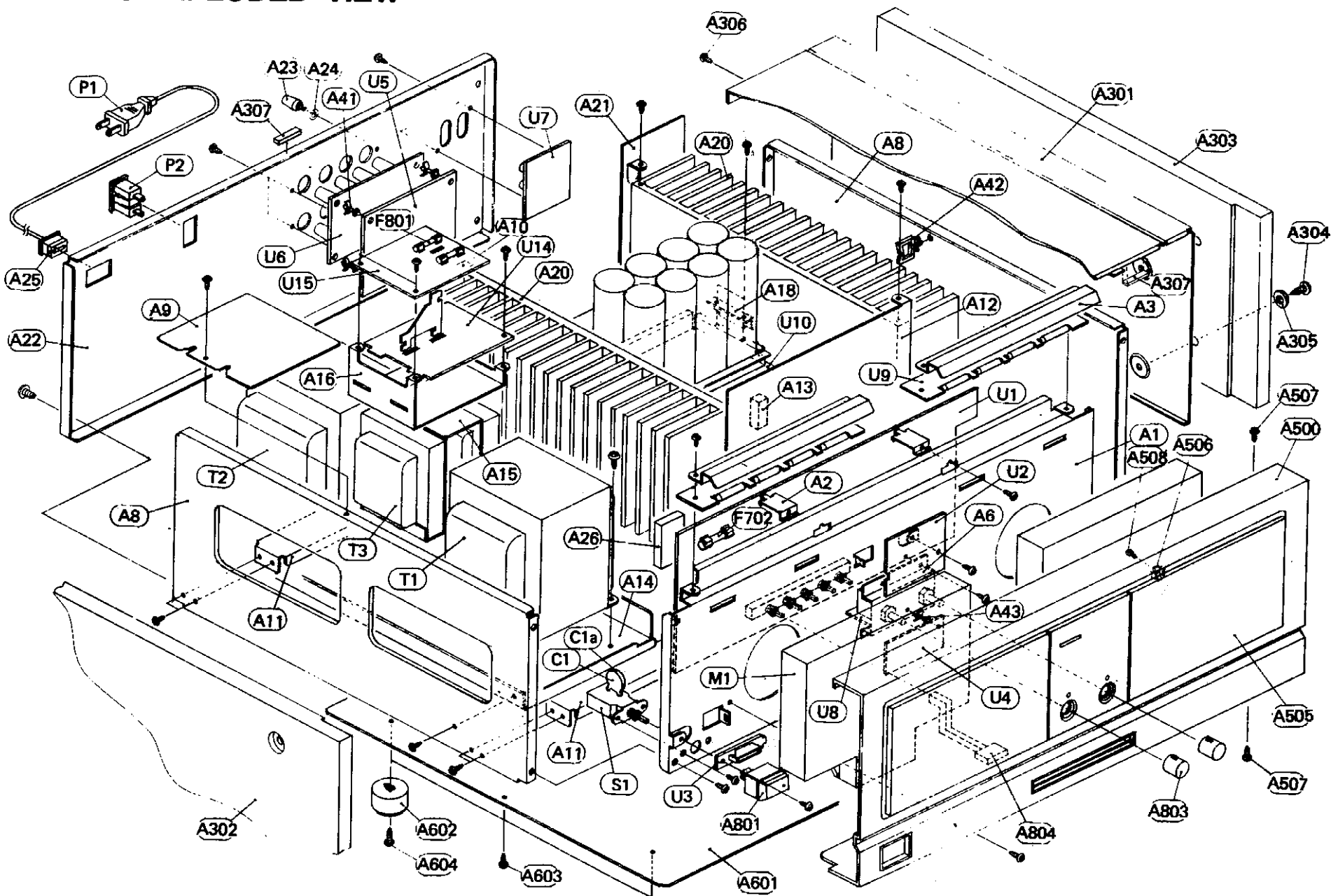
FRONT PANEL FACILITIES



1. Power Switch (POWER)
2. Speaker Selector Switches (SPEAKERS)
3. Speaker Selector Indicators (SPEAKERS)
4. Input Selector Switch (INPUT)
5. Input Selector Indicators
6. Level Controls (LEFT/RIGHT LEVEL)
7. Peak Power Meters
8. Meter Range Selector Switches (METER RANGE)
9. Meter Range Indicator (METER RANGE)
10. Servo Operation Indicator (SERVO OPERATION)

This diagram is an exploded view of a power supply unit, showing the internal components and their assembly points. The components are labeled with alphanumeric codes:

- Power Input/Output:** P1 (AC input plug), P2 (DC output connector).
- Case and Mounting:** A21, A22, A23, A24, A25, A26, A301, A302, A303, A304, A305, A306, A307, A500, A501, A502, A503, A504, A505, A506, A507, A601, A602, A603, A604.
- Transformers and Inductors:** T1, T2, T3, A15, A16, A18, A19, A20, A21, A22, A23, A24, A25, A26, A27, A28, A29, A30, A31, A32, A33, A34, A35, A36, A37, A38, A39, A40, A41, A42, A43, A44, A45, A46, A47, A48, A49, A50, A51, A52, A53, A54, A55, A56, A57, A58, A59, A60.
- Capacitors:** C1, C1a, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60.
- Resistors:** R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60.
- Semiconductors:** U1, U2, U3, U4, U5, U6, U7, U8, U9, U10, U11, U12, U13, U14, U15, U16, U17, U18, U19, U20, U21, U22, U23, U24, U25, U26, U27, U28, U29, U30, U31, U32, U33, U34, U35, U36, U37, U38, U39, U40, U41, U42, U43, U44, U45, U46, U47, U48, U49, U50, U51, U52, U53, U54, U55, U56, U57, U58, U59, U60.
- Other Components:** F801, F802, F803, F804, F805, F806, F807, F808, F809, F810, F811, F812, F813, F814, F815, F816, F817, F818, F819, F820, F821, F822, F823, F824, F825, F826, F827, F828, F829, F830, F831, F832, F833, F834, F835, F836, F837, F838, F839, F840, F841, F842, F843, F844, F845, F846, F847, F848, F849, F850, F851, F852, F853, F854, F855, F856, F857, F858, F859, F860.



CHASSIS-EXPLODED VIEW-PARTS LIST

REF NO.	PARTS NO.	DESCRIPTION
A1	27110285A	Front bracket
A2	27141064	Bracket (FPC)
A3	27141065A	Bracket (LAMP)
A6	27141066	Bracket (VOL)
A8	27115204A	Side bracket
A9	28175129	Insulating plate
A10	29360626-1	Label
A11	27130427	Bracket
A12	27150212B	Shield plate
A14	27130428A	Bracket (PT)
A15	27130429	Bracket (PHT)
A16	27141067	Bracket (PC)
A18	27141068	Bracket (HE)
A20	27160186	Radiator
A21	27150215A	Shield plate
A22	27120851	Back panel
	27120852	Back panel [G]
	27120854	Back panel [W]
	27120858	Back panel [X]
	27120856	Back panel [Q]
A23	25060041	3 × 14mm, Ground terminal
A24	87644010	W4 × 10F(BC), Washer
A25	27300750	#2271, Bushing (Power supply cable)
	28190009	#2272, Bushing (Power supply cable)
		[W]
A26	28140676	11 × 50 × 30mm, Cushion
A30	28330072	Cap (AC outle) [X]
A40	27190009	Holder
A41	27190480	Holder
A42	27300243	WS-2WS, Wire holder
A43	27190458	WLS-06-0, Holder
A301	28184319B	Top cover
A302	28185257	Side board (L)
A303	28185259	Side board (R)
A304	83G440303	4STV × 30FN(BC), Screw
A305	870086	4 × 12BS(BC), Special washer
A306	838440089	4TTB + 8C(BC), Tapping screw
A307	28140020	4 × 10 × 40mm, Cushion
A500	17818121	Front panel ass'y
	17819121	Front panel ass'y [N][X]
A505	28191351B	Clear plate
A506	27190451	Holder, (Grass)
A508	833430080	3TTP+8P(BC), Tapping screw
A601	27170226 1A	Bottom board
A602	280889B	Bottom leg
A603	831430088	3TTW + 8B(BC), Tapping screw
A604	831430168	3TTW + 16B(BC), Tapping screw

REF NO.	PARTS NO.	DESCRIPTION
A801	28322541	Knob ass'y (POW)
A803	28322542A	Knob (VOL)
A804	28322543A	Knob (PUSH) C D009
Q449, Q450	2201653 or	2SC3856(O) or
Q453, Q454	2201655 or	2SC3856(P) or
Q457, Q458	2201654	2SC3856(Y), Transister
Q451, Q452	2201663 or	2SA1492(O) or
Q455, Q456	2201665 or	2SA1492(P) or
Q459, Q460	2201664	2SA1492(Y), Transister
Δ T1	2300128	NPT-928D, Power transformer
	2300129	NPT-928G, Power transformer [G]
	2300130	NPT-928DG, Power transformer [W][X]
	2300131	NPT-928Q, Power transformer [Q]
Δ T2	2300098A	NPT-918D, Power transformer
	2300099	NPT-918G, Power transformer [G]
	2300100	NPT-918DG, Power transformer [W][X]
	2300101	NPT-918Q, Power transformer [Q]
Δ T3, T4	231097	NCH-3144, Choke coil
Δ S1	25035381	NPS-121-L345P, Power switch
Δ S2	25065195	NSS-1288P, Slide switch [W][X]
Δ P1	253122	AS-UC-6#16, Power supply cable
	253092-1	AS-CEE-2, Power supply cable [G]
	253118	AS-SAA, Power supply cable [Q]
	253131	AS-CEE-3, Power supply cable [W]
Δ I'2	25050290	NSCT-2P118T, AC outlet [D][N][X]
M1, M2	243148	NIND-2000S148, Power meter
Δ C1, C2	3500065A	0.01μF, AC400V, Capacitor (IS)
C1a, C2a	27300601	SB-1925, Cover (Capacitor)
F702	252044	2A ST-6, Secondary fuse
	252074	2A SE-EAK, Secondary fuse [G][Q]
Δ F801, F802	252052	7A ST-6, Primary fuse [D][N][W][X]
Δ F803, F804	252077	4A SE EAK, Primary fuse [G][W][X][Q]

NOTE

[D]: Only 120V models
 [G]: Only 220V models
 [W]: Only 120V/220V models
 [N]: Only U.S.A. models
 [X]: Only Military market models
 [Q]: Only British and Australian models

REF NO.	PARTS NO.	DESCRIPTION
U1	17818515-1	NAMA-2615-1, Meter and protector circuit pc board ass'y
	17814515-1A	NAMA-2615-1A, Meter and protector circuit pc board ass'y [G][Q]
U2	17818516-1	NADIS-2616-1, Volume/Servo LED pc board ass'y
U3	17818517-1	NADIS-2617-1, Power LED pc board ass'y
U4	17818518-1	NADIS-2618-1, Speaker LED pc board ass'y
U5	17818519-1	NAOP-2619-1, Relay circuit pc board ass'y
U6	17818520-1	NAST-2620-1, Speaker terminal pc board ass'y
	17814520-1A	NAST-2620 1A, Speaker terminal pc board ass'y [G][W][X][Q]
U7	17818521-1	NAPJ-2621-1, Input terminal pc board ass'y
U8	17818522-1	NAVR-2622-1, Level volume pc board ass'y
	17818523-1	NAPL-2623-1, Meter lamp pc board ass'y
U10	17818525-1	NAPA-2625-1, Power amplifier pc board ass'y
U11	17818526-1	NACC-2626-1, Transistor pc board ass'y
U12	17818527-1	NADA-2627-1, Transistor pc board ass'y
U13	17818528-1	NADA-2628-1, Transistor pc board ass'y
U14	17818529-1	NARC-2629-1, Power supply circuit pc board ass'y
U15	17818530-1	NAFU-2630-1, Fuse pc board ass'y
	17814530-1A	NAFU-2630-1A, Fuse pc board ass'y [G][Q]
	17810530-1B	NAFU-2630 1B, Fuse pc board ass'y [W][X]

NOTE: THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD PARTS LIST

METER AND PROTECTOR CIRCUIT PC BOARD (NAMA-2615-1,NAMA-2615-1A)

CIRCUIT NO.	PARTS NO.	DESCRIPTION	CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q201,Q202 Q601,Q602 Q604,Q605 Q702 Q703 Q704,Q705 Q706	Transistors		R723	442520474	4.7 Ω , 1/2W, Metal oxide film
	2212806 or	2SK389(BL) or	R724	441721814	180 Ω , 2W, Metal oxide film
	2212807	2SK389(V)	R725	441720474	4.7 Ω , 2W, Metal oxide film
	2211945	2SK246(GR)	R727	442520474	4.7 Ω , 1/2W, Metal oxide film
	2211255	2SC1815(GR)	R735	442521824	1.8k Ω , 1/2W, Metal oxide film
	2211504	2SA950(Y)		Switch	
	2211455	2SA1015(GR)	S701~S705	25035522	NPS-242-222-162L484
	2201276 or	2SB772(P) or		Relay	
	2201275	2SB772(Q)	RL601	25065048	FRL-644D-12/2AS
	2201286 or	2SD882(P) or		Fuse holders	
Q203,Q204 Q603 Q606,Q607 Q701	2201285	2SD882(Q)	F701a,F702a	250113	S-N5051
	ICs		F702a	25050065	YSH403T [G][X][Q]
	222652	M5218L		Fuse label	
	222529	TA7318P(R)		29360364	T2A/250V [G][Q]
D201~D204 D205~D208 D601,D602 D603,D604 D605 D701 D702 D703 D705	222502	NJM4558DX	JC601,JC607	25050282	NSCT-5P110
	222584	TA7317P	JC409	25050283	NSCT-6P111
	Diodes		JC603	25050281	NSCT-4P109
	223155	1SS138	JC401,JC402,JC604	25050285	NSCT-8P113
	2239651 or	RD13E-B1 or	P201,P202	2000553	NSAS-6P509 Socket ass'y
	2243241	MTZ13-A	P703	2000550	NSAS-6P506 Socket ass'y
	223145	1S2076TD			
	2239672 or	RD15E-B2 or			
	2243252	MTZ-15B			
	223145	1S2076TD			
C201~C204 C205~C208 C215~C218 C223~C226 C601,C602 C605,C606 C607 C608,C609 C613,C614 C615,C616 C617,C618 C701,C702 C704 C706 C707 C708 C710 C711	223155	1SS138			
	2239493 or	RD6.2E-B3 or			
	2239533 or	RD7.5E-B3 or			
	2243183	MTZ7.5-C			
	2243163	MTZ6.2-C			
	223865	2W02			
	Capacitors				
	372125614	560pF, 50V, Styrene			
	372122214	220pF, 50V, Styrene			
	391251017	100 μ F, 25V, Elect. (MUSE)			
R215,R216 R225,R226 R613,R614 R633,R634 R645,R646 R717 R718 R719 R720 R721 R722	354741019	100 μ F, 16V, Elect.			
	354784799	0.47 μ F, 50V, Elect.			
	354780339	3.3 μ F, 50V, Elect.			
	354780109	1 μ F, 50V, Elect.			
	379121035	0.01 μ F, 50V, Film (DEW)			
	354752209	22 μ F, 25V, Elect.			
	354780339	3.3 μ F, 50V, Elect.			
	354754709	47 μ F, 25V, Elect.			
	354722219	220 μ F, 6.3V, Elect.			
	354732209	22 μ F, 10V, Elect.			
R215,R216 R225,R226 R613,R614 R633,R634 R645,R646 R717 R718 R719 R720 R721 R722	354784799	0.47 μ F, 50V, Elect.			
	354732219	220 μ F, 10V, Elect.			
	354742229	2200 μ F, 16V, Elect.			
	379121045	0.1 μ F, 50V, Film (DEW)			
	354741009	10 μ F, 16V, Elect.			
	Resistors				
	441722434	24 k Ω , 2W, Metal oxide film			
	442524724	4.7k Ω , 1/2W, Metal oxide film			
	5221023	N10HR470BEM, Semi-fixed			
	4000028	D33A, Thermistor			
R215,R216 R225,R226 R613,R614 R633,R634 R645,R646 R717 R718 R719 R720 R721 R722	5221023	N10HR470BEM, Semi-fixed			
	442520684	6.8 Ω , 1/2W, Metal oxide film			
	442528204	82 Ω , 1/2W, Metal oxide film			
	442524714	470 Ω , 1/2W, Metal oxide film			
	441720274	2.7 Ω , 2W, Metal oxide film			
	442524714	470 Ω , 1/2W, Metal oxide film			
	442522214	220 Ω , 1/2W, Metal oxide film			

VOLUME/SERVO LED PC BOARD (NADIS-2616-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D710,D711	Diodes	
	225137CG or	SEL-2413E-CG or
	225137CY or	SEL-2413E-CY or
	225137DG or	SEL-2413E-DG or
D712,D713	225137DY	SEL-2413E-DY
	225174 or	SLR55MC3N or
	225173	SLR55MC3M
	Holders	
	27190453	Holder (SLED)
	27190319A	Holder (LED)

POWER LED PC BOARD (NADIS-2617-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D714,D715	Diodes	
	225142	SEL2913K
	Holder	
	27190454	Holder (PLED)

SPEAKER LED PC BOARD (NADIS-2618-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D716	Diodes	
	225167RB or	GL-5HY10-RB or
D717,D718	225167RC	GL-5HY10-RC
	225174 or	SLR55MC3N or
	225173	SLR55MC3M

CIRCUIT NO. PARTS NO. DESCRIPTION

Holders
27190319A Holder (LED)

RELAY CIRCUIT PC BOARD (NAPQ-2619-1)

CIRCUIT NO. PARTS NO. DESCRIPTION

D781 ~ D783	Diodes 223145	1S2076TD
L781 ~ L784	Coils 231015	S-0.8C
C783 ~ C786	Capacitors 379121245	0.12 μ F, 50V, Film (DEW)
R781 ~ R784	Resistors 441620514	5.1 Ω , 1W, Metal oxide film
R785, R786	441720514	5.1 Ω , 2W, Metal oxide film
RL781 ~ RL783	Relaies 25065036	NRL-4P3A-DC12-01
JC407, JC408	Sockets 25050273	NSCT-9P131
JC603	25050268	NSCT-4P96

SPEAKER TERMINAL PC BOARD (NAST-2620-1, NAST-2620-1A)

CIRCUIT NO. PARTS NO. DESCRIPTION

P791, P792	Terminals 25060100	NTM-4PDMN40
P791, P792	25060101	NTM-4PDMN41

[G] [W] [X] [Q]

INPUT TERMINAL PC BOARD (NAPJ-2621-1)

CIRCUIT NO. PARTS NO. DESCRIPTION

P101	Terminal 25045196	NPJ-4PDBL77
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LEVEL VOLUME PC BOARD (NAVR-2622-1)

CIRCUIT NO. PARTS NO. DESCRIPTION

R151, R152	Resistors 5104183A	N27DGL30KBB0
P151	Sockets 2000551	NSAS-6P507
P152	2000552	NSAS-6P508

METER LAMP PC BOARD (NAPL-2623-1)

CIRCUIT NO. PARTS NO. DESCRIPTION

PL881 ~ PL884	Lamps 210191	PL14V150mA (Green)
PL885 ~ PL888	210192	PL14V150mA (Orange)

POWER AMPLIFIER PC BOARD (NAPA-2625-1)

CIRCUIT NO. PARTS NO. DESCRIPTION

Q401 ~ Q404	Transistors 2211732 or 2211733	2SC1845(F) or 2SC1845(E)
Q405, Q406	2211792 or 2211793	2SA992(F) or 2SA992(E)
Q407, Q408	2211414	2SC1627(Y)
Q411 ~ Q414	2211782 or 2211783	2SA991(F) or 2SA991(E)
Q415 ~ Q418	2211902 or 2211903	2SC1844(F) or 2SC1844(E)
Q421 ~ Q424	2211359 or 2211358	2SA949-Y(ONK) or 2SA949-O(ONK)
Q425, Q426	2211639 or 2211638	2SC2229-Y(ONK) or 2SC2229-O(ONK)
Q427, Q428	2211792 or 2211793	2SA992(F) or 2SA992(E)
Q429, Q430	2212560	2SC3433
Q431, Q432	2211255	2SC1815(GR)
Q433, Q434	2211455	2SA1015(GR)
Q435, Q436	2211639 or 2211638	2SC2229-Y(ONK) or 2SC2229-O(ONK)
Q437, Q438	2211359 or 2211358	2SA949-Y(ONK) or 2SA949-O(ONK)
Q441	2200394	2SC1625(Y)
Q442	2200404	2SA815(Y)
Q443		2SC3439

D401 ~ D408	Diodes 223155	1SS138
D409 ~ D412	225218	LTZ-MR15, LED
D413 ~ D416	223162	1SS82
D417 ~ D420	225218	LTZ-MR15, LED
D421, D422	223155	1SS138
D423, D424	223168	DA210S
D431, D432	223155	1SS138
D433, D434	223145	1S2076TD
D435 ~ D438	223963	GP-30DL
D439 ~ D442	223162	1SS82
D451, D452	2243293	MTZ22-C
D453	2243251	MTZ15-A
D454, D455	223155	1SS138

L401, L402	Coils 231098	NCH-4145
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C405 ~ C408	Capacitors 354723319	330 μ F, 6.3V, Elect.
C413 ~ C416	391241007	10 μ F, 16V, Elect. (MUSE)
C417, C418	379121025	0.001 μ F, 50V, Film (DEW)
C423, C424	391241007	10 μ F, 16V, Elect. (MUSE)
C425 ~ C428	379131035	0.01 μ F, 100V, Film (DEW)
C435, C436	379131045	0.1 μ F, 100V, Film (DEW)
C437, C438	379122245	0.22 μ F, 50V, Film (DEW)
C443 ~ C446	379124735	0.047 μ F, 50V, Film (DEW)
C451, C452	354752209	22 μ F, 25V, Elect.
C453, C454	354751019	100 μ F, 25V, Elect.
C455 ~ C462	3504197	10000 μ F, 90V, Elect.
C463 ~ C466	354780339	3.3 μ F, 50V, Elect.

R401 ~ R404	Resistors 442525614	560 Ω , 1/2W, Metal oxide film
R405, R406	442523314	330 Ω , 1/2W, Metal oxide film
R411, R412	442521614	160 Ω , 1/2W, Metal oxide film
R413, R414	441625634	56 k Ω , 1W, Metal oxide film
R415, R416	442521534	15 k Ω , 1/2W, Metal oxide film
R423, R424	5225076	N10HR22KBDM, Semi-fixed
R425 ~ R428	442520514	5.1 Ω , 1/2W, Metal oxide film
R429 ~ R432	441724324	4.3k Ω , 2W, Metal oxide film

CIRCUIT NO.	PARTS NO.	DESCRIPTION
R433~R436	442521214	120 Ω , 1/2W, Metal oxide film
R445~R448	442523914	390 Ω , 1/2W, Metal oxide film
R449,R450	442521204	12 Ω , 1/2W, Metal oxide film
R457~R460	442525104	51 Ω , 1/2W, Metal oxide film
R463,R464	442520514	5.1 Ω , 1/2W, Metal oxide film
R465,R466	441720754	7.5 Ω , 2W, Metal oxide film
R467~R478	442520224	2.2 Ω , 1/2W, Metal oxide film
R479~R490	442521014	100 Ω , 1/2W, Metal oxide film
R491~R504	4000080	0.47 Ω , 5W, Metal plate
R505~R516	4000063	0.47 Ω , 2W, Metal plate
R531,R532	441621024	1k Ω , 1W, Metal oxide film
R535	441724324	4.3k Ω , 2W, Metal oxide film
Sockets		
JC403,JC404	25050267	NSCT-3P95
JC405,JC406,JC409	25050270	NSCT-6P98
Bracket		
	27130430	Bracket (KE)
Bus plate		
	27300826A	Bus (S)
	27300827A	Bus (C)

TRANSISTOR PC BOARD (NACC-2626-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
~~Q443~~ Q403(Q444)	Transistor 2212884 or 2212863	2SC3419(Y) or 2SC3419(O)
C463(C464)	Capacitor 379122235	0.022 μ F, 50V, Film (DEW)

TRANSISTOR PC BOARD (NADA-2627-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q445(Q446)	Transistor 2201684 or 2201683	2SC3298A(Y) or 2SC3298A(O)

TRANSISTOR PC BOARD (NADA-2628-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
Q447(Q448)	Transistor 2201674 or 2201673	2SA1306A(Y) or 2SA1306A(O)

POWER SUPPLY CIRCUIT PC BOARD (NARC-2629-1)

CIRCUIT NO.	PARTS NO.	DESCRIPTION
D801,D802	Diodes 22380008	RB604
C801~C804	Capacitors 375103345	0.33 μ F, 125V, Film (ME)
C805,C806	375104745	0.47 μ F, 125V, Film (ME)
R801~R804	Resistors 442522294	0.22 Ω , 1/2W, Metal oxide film

CIRCUIT NO.	PART NO.	DESCRIPTION
R805,R806	442527504	75 Ω , 1/2W, Metal oxide film

FUSE PC BOARD (NAFU-2630-1,NAFU-2630-1A,NAFU-2630-1B)

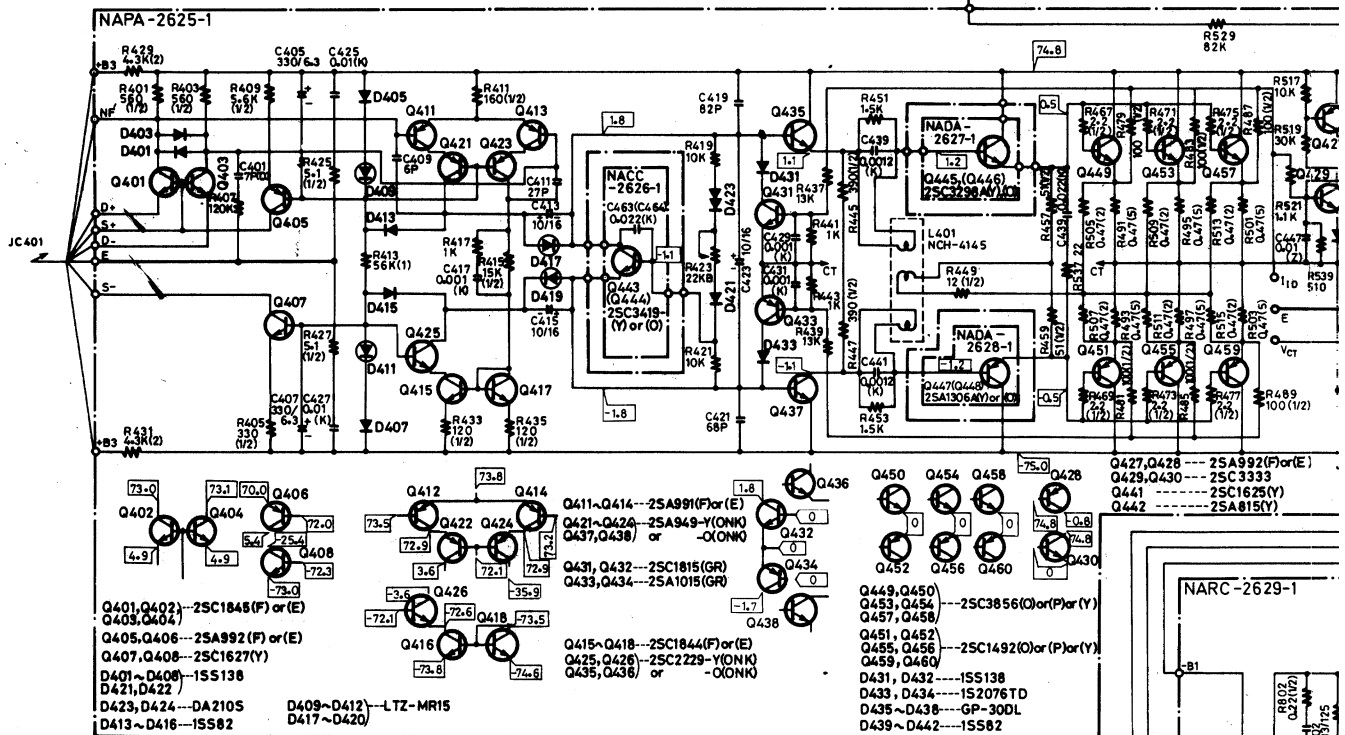
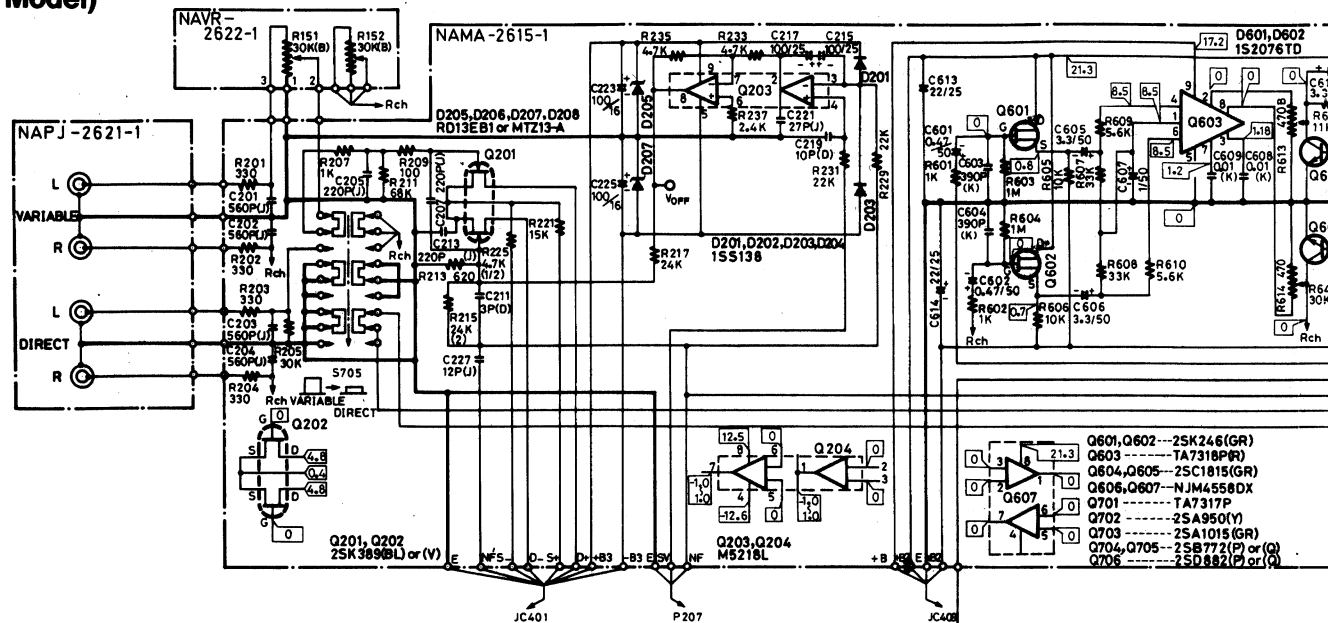
CIRCUIT NO.	PARTS NO.	DESCRIPTION
Fuse holders		
F801a,F802a	250113	S-N5051
F803a,F804a	25050065	YSH403T [G][W][X][Q]
Terminals		
P801,P802	25060092	NTM 1S33

NOTE

G: Only 220V models
W: Only 120V/220V models
X: Only Military market models
Q: British and Australian models

SCHEMATIC DIAGRAM

(120V Model)



NOTES

- ALL RESISTORS ARE IN OHMS, 1/4 WATT UNLESS OTHERWISE NOTED.
- ALL CAPACITORS ARE IN μ F, 50VW UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS ($\pm$) ARE IN μ F/WV.
- VOLTAGE MEASURED WITH VTVM (NO INPUT SIGNAL).
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.
- THE COMPONENTS IDENTIFIED BY MARK Δ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.

C	D	G	J	K	M	Z
$\pm 0.25\%$	$\pm 0.5\%$	$\pm 2\%$	$\pm 5\%$	$\pm 10\%$	$\pm 20\%$	$\pm 80\%$



2SK246
2SC1815
2SA991
2SA992
2SC1844
2SC1845
2SC3333
2SA950

